

**Introduction-**Polycythemia is a laboratory finding in which there is an increased number of red blood cells, along with an accompanying increase in the concentration of hemoglobin in peripheral blood. . Considering the high frequency of jak $\gamma$  mutation in patients with polycythemia vera, this study was conducted to distinguish primary polycythemia from secondary by jak $\gamma$  mutation.

**Materials and Methods:** This study was a descriptive epidemiologic. In this study, patients admitted to the hematology clinic with complaints of polycythemia, by definition, WHO, hemoglobin greater than g / dL 16 for ladies hemoglobin greater than g / dL 15 for men, were enrolled. . Patients were given appropriate history and then patients were physically examined. For all patients, chest x-ray and echocardiography and ultrasound was performed in terms of splenomegaly. . For patients, Jak $\gamma$  Mutation RT-PCR Quntitative was performed. For mutated patients, BMA & B was performed. Finally, the data were analyzed using SPSS 17,0 software.

**Results:** Of the 90 patients, (82,2%) 74 were men and (17,8%) were 16 women. Of these, 11 patients (12,2%) had Jak $\gamma$  mutation and 79 (87,8%) patients lacked it. . Female sex with P.V = 0/000 and splenomegaly with P.V = 0/000 and itching with P.V = 0/000 had a significant relationship. There was a significant relationship between WBC and PLT with jak $\gamma$  mutation. Mean hemoglobin was lower in patients with jak $\gamma$  mutation. In fact, 100% of patients with Jak $\gamma$  mutations had polycythemia vera.

**Conclusion:** The mutation level of Jak $\gamma$  in patients with polycythemia vera in this study was comparable to previous studies. This test may result in early identification of myeloproliferative disorders (MPD) (one of which is a polycythemic manifestation).

**Keywords:** Jak $\gamma$  mutation, polycythemia, polycythemia vera, myeloproliferative neoplasms.